medical comorbidities, including ventilator dependence (2.1% vs 0.1%; $P < .01$), congestive heart failure (8.7% vs 3.1%; $P < .01$), recent myocardial infarction (4.5% vs 2%; $P < .01$), and insulin dependence (59.6% vs 53.6%; $P = .03$) compared with the NRA group. Preoperative vascular disease was more severe in the RA group as well, with rest pain/gangrene (50.9% vs 39.1%; $P < .01$) and history of amputation (73.1% vs 49.8%; $P < .01$) both higher in the RA group. The RA group also had a higher proportion of emergency procedures (11.4% vs 4.4%; $P < .01$), longer operative time (226 ± 11.5 minutes vs 208.4 ± 2.6 minutes; $P < .01$) and longer prior hospital length of stay (16.5 ± 1.8 days vs 8 ± 0.3 days; $P < .01$). The RA group also was taken back to the operating room more frequently during the index admission (36.2% vs 15.3%; $P < .01$) than the NRA group. Preoperative hypertension (odds ratio, 46.7; 95% confidence interval, 34.6-62.9) and rest pain/gangrene (odds ratio, 50.1; 95% confidence interval, 36.4-69.1) were the only independent predictors of RA on multivariate analysis.

Conclusions: Insulin dependence and preoperative cardiac comorbidities are not predictive of readmission rates after FPB in diabetic patients. The presence of critical limb ischemia is the most predictive factor for 30-day readmission after FPB in diabetic patients.

Author Disclosures: **K. H. Nagarsheth:** None; **J. Schor:** None; **K. Singh:** None; **M. D'Alessandro:** None; **S. Zia:** None; **J. Deitch:** None.

The da Vinci Robot in the Field of Vascular Surgery

Petr Stadler, MD, PhD, Libor Dvoracek, MD, Petr Vitasek, MD, Pavel Matous, MD. Na Homolce Hospital, Praha 5, Czech Republic

Objectives: The da Vinci system has been used by a variety of disciplines for laparoscopic procedures, but the use of robots in vascular surgery is still relatively unknown. The feasibility of laparoscopic aortic surgery with robotic assistance has been sufficiently demonstrated. Our clinical experience with robot-assisted vascular surgery performed using the da Vinci system is described.

Methods: Between November 2005 and May 2014, we performed 310 robot-assisted vascular procedures. A total of 224 patients were prospectively evaluated for occlusive diseases, 61 patients for abdominal aortic aneurysm (Fig), 4 for a common iliac artery aneurysm, 4 for a splenic artery aneurysm, 1 for an internal mammary artery aneurysm, 5 for hybrid procedures, 2 for median arcuate ligament release, and 9 for type II endoleak treatment after endovascular aneurysm repair.

Results: A total of 299 cases (96.5%) were successfully completed robotically, and one patient's (0.3%) surgery was discontinued during laparoscopy due to heavy aortic calcification. Conversion was necessary in 10 patients (3.2%). The 30-day mortality rate was 0.3%, and early nonlethal postoperative complications were observed in six patients (1.9%).

Conclusions: Our experience with robot-assisted laparoscopic surgery has demonstrated the feasibility of this technique for occlusive diseases, aneurysms, type II endoleak treatment after endovascular aneurysm repair, for median arcuate ligament release, and hybrid procedures.

Fig. The central anastomosis of the robotic abdominal aortic aneurysm repair.

Author Disclosures: **P. Stadler:** None; **L. Dvoracek:** None; **P. Vitasek:** None; **P. Matous:** None.

Type I Endoleak at Completion of Endovascular Abdominal Aneurysm Repair Is Associated With Increased Perioperative Mortality

Tze-Woei Tan, MD[1], Mohammad Eslami, MD[2], Wayne W. Zhang, MD[1], Denis Rybin[2], Doros Gheorghe[2], Alik Farber, MD[2]. [1]Louisiana State University Health Sciences Center Shreveport, Shreveport, La; [2]Boston University Medical Center, Boston, Mass

Objectives: Type I endoleak (TIE) during endovascular abdominal aortic aneurysm repair (EVAR) is usually identified and treated intraoperatively. We evaluated the outcomes of patients who, despite possible treatment, had TIE at completion of EVAR.

Methods: We examined consecutive EVAR within the Vascular Study Group of New England database (2003-2012), and the outcomes of patients who had TIE at completion were compared with those who did not. Ruptured abdominal aortic aneurysms were excluded. Outcomes included perioperative death, cardiac complication, reoperation, and 1-year mortality. Multivariable logistic regression was used to determine factors associated with perioperative mortality as well as factors associated with TIE.

Results: Among the 2402 EVARs in the study cohort, 2235 (93%) were performed electively; 167 (7%) had a symptomatic abdominal aortic aneurysm. A TIE was present in 80 patients (3.3%) at completion of surgery; these patients were older, more likely to be female, have a larger endograft main body diameter, and have unplanned graft extension (Table). TIE was associated with increased postoperative mortality (5% vs 0.6%; $P = .002$) and cardiac dysrhythmia (8.8% vs 3.2%; $P = .02$). Four patients underwent intraoperative conversion to open repair and none died before hospital discharge. In multivariable analysis, TIE was associated with increased perioperative mortality (odds ratio [OR], 4.6; 95% confidence interval [CI], 1.3-16.7; $P = .02$). Other factors associated with perioperative death included female gender (OR, 4.6; 95% CI, 1.7-12.8; $P = .003$) and cardiac dysrhythmia (OR, 17.5; 95% CI, 6.0-50.6); p30mm (OR, 2.5; 95% CI, 1.6-4.4; $P < .001$) and unplanned graft extension (OR, 4.2; 95% CI, 2.5-7.3; $P < .001$).

Conclusions: TIE at EVAR completion occurs in up to 3% of patients and is associated with increasing age, female gender, larger endograft diameter, and unplanned graft extension. TIE is associated with increased risk of perioperative mortality. Additional study is needed to further define and improve perioperative outcomes of these at-risk patients.

Table I. Demographic, characteristics, and outcomes of patients with and without type I endoleak

Characteristics/ outcomes[a]	*Overall (N = 2402)*	*Type I endoleak (n = 80)*	*None (n = 2322)*	P *value*
Age, years	73.8 ± 8.4	77.9 ± 8.4	73.6 ± 8.5	<.001
Female gender	20.4	33.8	20.0	.004
Maximum diameter	57.7 ± 22.6	61.4 ± 11.9	57.6 ± 22.9	.14
Graft body diameter	27.2 ± 3.9	28.8 ± 3.9	27.2 ± 3.6	<.001
Unplanned graft extension	10.4	32.1	9.6	<.001
Hospital death	0.7	5.0	0.6	.002
Dysrhythmia	3.4	8.8	3.2	.018
Reoperation	2.0	5.0	1.9	.08
1-year mortality	5.7	8.8	5.6	.22

[a]Data are shown as mean ± standard deviation or as percentage.

Author Disclosures: **T. Tan:** None; **M. Eslami:** None; **W. W. Zhang:** None; **D. Rybin:** None; **D. Gheorghe:** None; **A. Farber:** None.

Patients With Familial Abdominal Aortic Aneurysms Are at Increased Risk for Type 1 Endoleak Following Elective Endovascular Aneurysm Repair

Biju K. Thomas, MD, Evan J. Ryer, MD, Robert P. Garvin, MD, Helena Kuivaniemi, MD, Ph.D., David P. Franklin, MD, James R. Elmore, MD. Geisinger Medical Center, Danville, Pa

Objectives: A recent investigation has documented increased aneurysm-related complications after endovascular abdominal aortic aneurysm (AAA) repair (EVAR) of familial AAAs (fAAAs). We hypothesized that fAAA patients are not at increased risk after EVAR compared with EVAR for sporadic AAAs (spAAA). To this end, we performed a retrospective review of our single institution series.

Methods: Epidemiologic data was collected through the electronic medical record. Major adverse events were defined as myocardial infarction, cardiac arrest, respiratory failure requiring tracheostomy, renal failure